COLDchain®
冷鲜联

Integrated Food Processing Equipment Solution

Low-Temperature High-Humidity Thawing Equipment

SALE
NEW
低温高湿
解冻设备
Introduction of the thawing equipment

Zhejiang Kanglian Intelligent Equipment Co., Ltd.

Shanghai Coldchain Mechanical and Electrical Equipment Co., Ltd.

35 Years

35 years of Serving global food businesses of all types


低温高湿螺旋解冻库

Everything
Creates the future with
New wisdom

About Us

Zhejiang Kanglian Intelligent Equipment Co., Ltd. is strategically located in Jiaxing City, Zhejiang Province – the core hinterland of the Yangtze River Delta – within 100 kilometers of Shanghai, Hangzhou, Suzhou, and Ningbo, offering exceptional transportation accessibility. The low-temperature high-humidity thawing equipment professionally manufactured by our company adopts advanced German thawing technology, with fully automatic staged control of thawing temperature and time via Siemens PLC system. Its introduction has met the market demand for meat thawing products, and more importantly, it preserves the original characteristics and surface freshness of the products. Currently, the low-temperature high-humidity air thawing machine designed and produced by our company is the fourth generation of our thawing equipment series, filling a technological gap in China's food thawing processes. The technical performance of this system remains on par with similar products from Japan, Europe, and the United States, enabling a high starting point and keeping pace with advanced international technologies in the field of food thawing. It is widely applicable in commercial sectors such as food processing plants, upscale hotels and restaurants, and large supermarkets. Our professional design and manufacturing personnel work closely with clients to provide systematic and reliable planning solutions as well as comprehensive after-sales services for a wide range of industries, including meat processing, bakery products, quick-frozen foods, meat production, and other agricultural and livestock product processing enterprises. The food processing equipment we manufacture features high technical content, energy efficiency, environmental friendliness, stable and high-performance operation, and complies with HACCP food hygiene standards. "Leading Fresh Technology" is the corporate tenet of Lenglian Company. We sincerely look forward to establishing friendly cooperative relationships with all enterprises and are committed to working closely with our clients to deliver superior services. Customer satisfaction and trust remain our ultimate goal.

35+ years
More than 35 years of experience in manufacturing and marketing

10000 m²
The production area is 10000 m²

100+ members
Our R&D and technical team consists of over 100 members

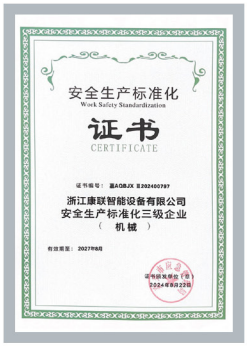
35+ Item
Have obtained more than 35 patent certificates


VERIFICATION OF CONFORMITY


质量管理体系认证证书

浙江康联智能设备有限公司

GB/T19001-2016 idt ISO9001:2015 标准


安全生产标准化

Work Safety Standardization

证书

CERTIFICATE

浙江康联智能设备有限公司

安全生产标准化三级企业

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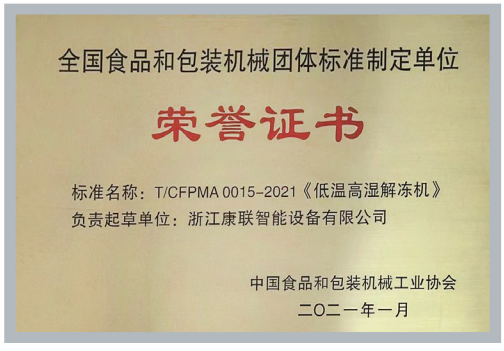

全国食品和包装机械团体标准制定单位

荣誉证书

标准名称：T/CFPMA 0015-2021《低温高湿解冻机》

负责起草单位：浙江康联智能设备有限公司

中国食品和包装机械工业协会

二〇二一年一月

Focusing on environmental protection and social responsibility for long-term development.

Continuously exploring new technologies and processes to drive industry progress.

Ensuring every product meets the highest standards to achieve customer satisfaction.

Providing efficient and professional services with a customer-centric approach.

Patent Certificate

Overview of food thawing

Currently, meat processing companies in China, especially those who manufacture low-temperature and high-temperature meat products, have encountered issues related to meat thawing.

Quality control, mass loss, and nutrient depletion during the thawing process have always been the primary concerns of quality control departments in meat enterprises.

Meat thawing is regarded as the final and most critical step in frozen preservation and storage.

01 The significance of the thawing process

02 The principle of thawing equipment

03 The composition of the thawing equipment

04 Unfreeze the remote monitoring system

Introduction of the thawing equipment

The working principle of the thawing machine is a device that uses air as the medium for thawing. By combining temperature reduction with humidity elevation, high-humidity air is used to thaw frozen products, preventing surface drying. Additionally, the low-temperature high-humidity thawing machine consists of a refrigeration system, air circulation system, steam heating system, and temperature and humidity control system. During the thawing process, it provides sufficient time for the internal juices of the meat to reabsorb, thereby preserving the internal juices and related nutrients. Furthermore, the thawing method of the low-temperature high-humidity thawing machine is gentle and moderate, causing no significant alteration to the meat quality or structure, thus ensuring high quality of the thawed meat. The low-temperature high-humidity thawing machine adopts fully automatic control, allowing adjustment of thawing time, temperature, and humidity according to different frozen product requirements, ensuring optimal thawing results and timing. After thawing, it automatically switches to refrigerated preservation mode. In terms of temperature, the low-temperature high-humidity thawing equipment maintains a consistently low temperature, resulting in a minimal temperature difference between the core and surface of the food, achieving more uniform thawing while preventing substantial microbial growth. On the basis of uniform thawing, it preserves the original nutritional components and fresh quality of the meat, achieving the goal of high-quality thawing.

Meaning of thawing technology

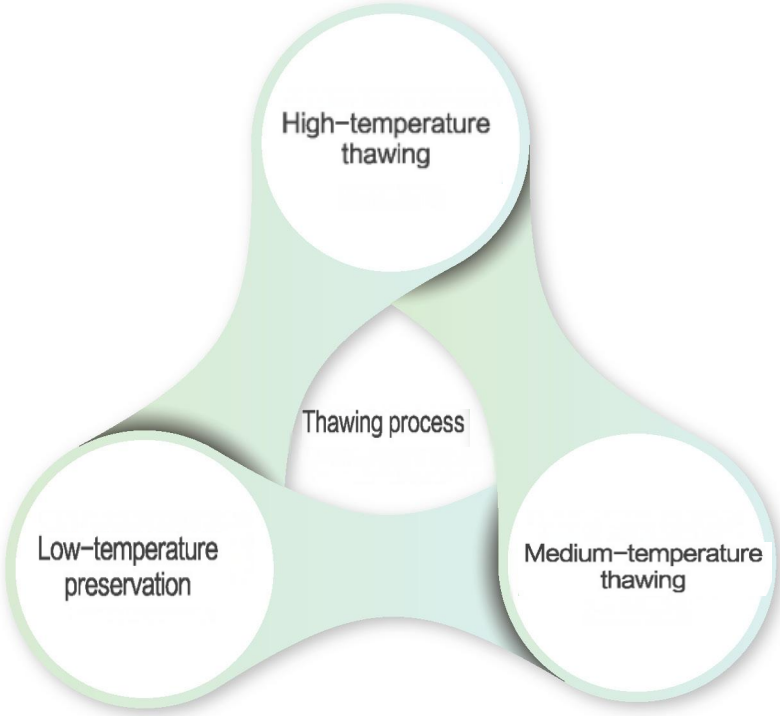
01 Lowers the weight loss of product

02 Maintain original colour，smell，taste and nutrients of the food

03 Thaw frozen products evenly， lower the number of micro-organism in food

04 Combine thawing and refrigerating technology，automatically refrigerate the food after thawing finishes to maintain freshness

Basic Process: In order to minimize the thawing time, prevent dripping during defrosting, and reduce the temperature difference between the food surface and center, we simulate three stages of thawing and refrigeration using different temperatures.



01

Low-Temperature High-Humidity Air

Using low-temperature, high-humidity clean air.

02

Uniform Airflow

Blow uniform airflow onto the surface of frozen products, ensuring even thawing of the products.

03

Thawing Time

The temperature, humidity, and time of the thawing air determine the quality of the product after thawing.

04

Freezing and Thawing

Theoretically, to maintain food quality: during rapid freezing, the faster the freezing time, the better; during thawing, at an appropriate temperature, the shorter the thawing time, the better.

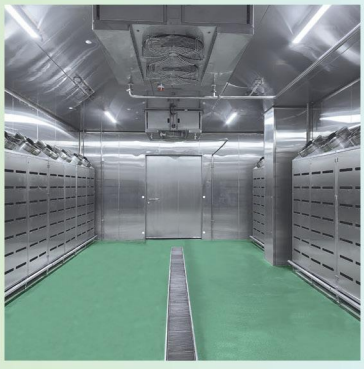
Further dimensions available on request.

Structure of thawing equipment

Air from Top and Bottom – Duct Structure

① The thawing equipment has a larger internal capacity for usage.

② The internal of thawing equipment can be sanitized more conveniently.



Air from the Side – Air Box Structure

① Ensures uniformity of airflow on both sides.

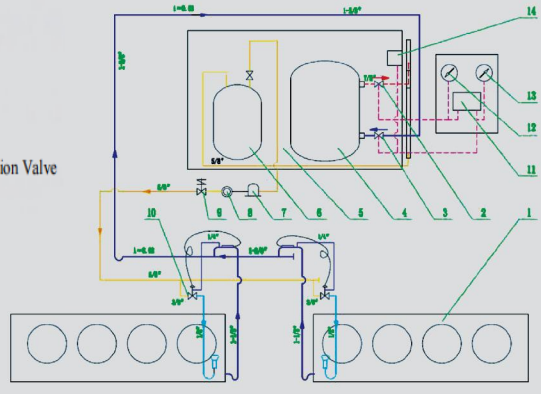
② Reduces the height requirement of the thawing equipment for the workshop.

Cooling System

Outdoor Integrated Unit – Actual Photo

Cooling System Schematic Diagram

1: Evaporator
2: Discharge Valve
3: Suction Valve
4: Scroll Refrigeration Compressor
5: Air-Cooled Condenser
6: Liquid Receiver
7: Dry Filter
8: Sight Glass
9: Solenoid Valve
10: External Equalized Thermostatic Expansion Valve
11: High/Low Pressure Switch
12: High-Pressure Gauge
13: Low-Pressure Gauge
14: Single High-Pressure Switch



Control System – Thawing Equipment

01

Touch screen from Siemens with programmable controller

02

The temperature，numidity，and thawing time in each stage can be set

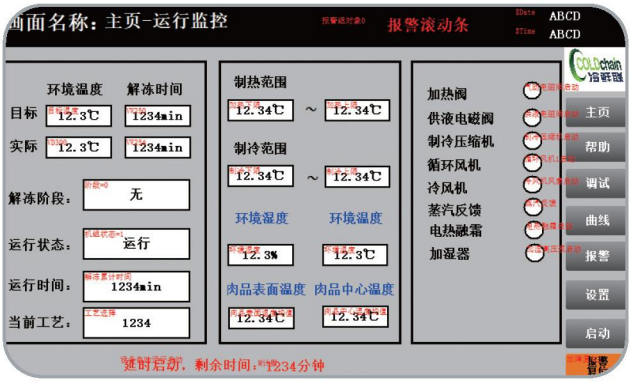
03

Self alarming system when over-heating

04

Automatic refrigerate to maintain freshness after finishing thawing

Thawing Equipment Control Screen



The Core of the Thawing Equipment

01 Low Temperature & High Humidity maintaining humidity of food under low temperature.

02 Uniform distribution of winding, allows uniform amount of air blown onto the frozen product consistently.

03 Bacterial killing technology inside the machine, ensure the food hygiene when thawing.

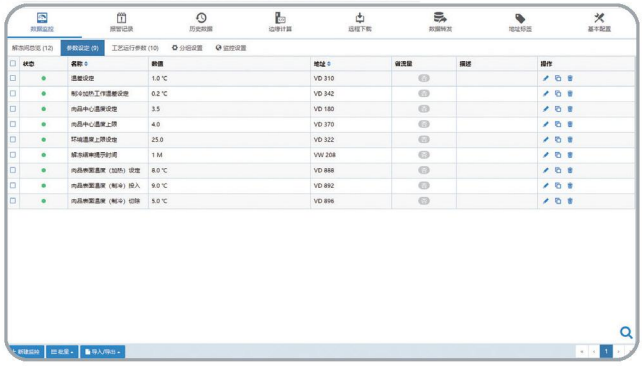
04 Automatic control throughout the whole process, can set the thawing system based on different products, ensure quality of thawing.

Thawing Remote Monitoring System

Kanglian Intelligent strives to create communication solutions for industrial equipment. Leveraging advanced cloud technology and 4G communication, it enables functions such as equipment network connectivity, data transmission, operation monitoring, and remote maintenance. Users can monitor equipment operation in real time via PC or mobile APP. In the event of a fault, relevant personnel will be notified immediately by SMS or phone call for prompt troubleshooting. The application of this technology significantly reduces factory investment and helps enterprises enter the era of the Industrial Internet of Things at an early date.

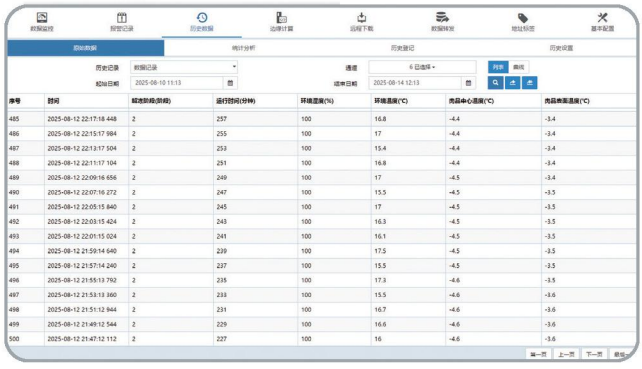
Software operating system

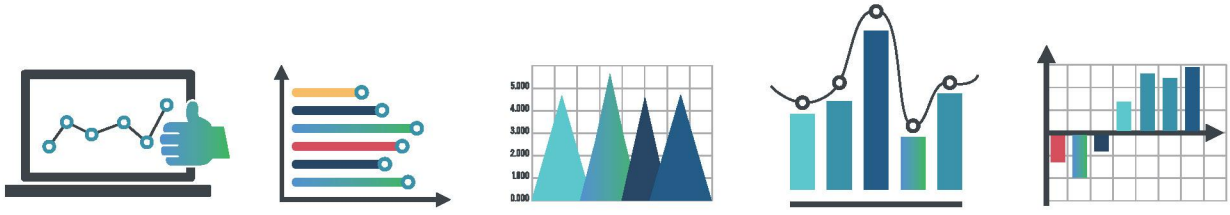
Condition of Operation



Historical Data

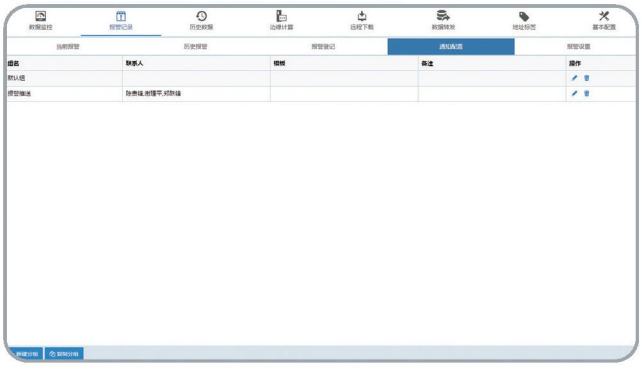
Alarming Record





Equipment early warning system

Alarming Contacts

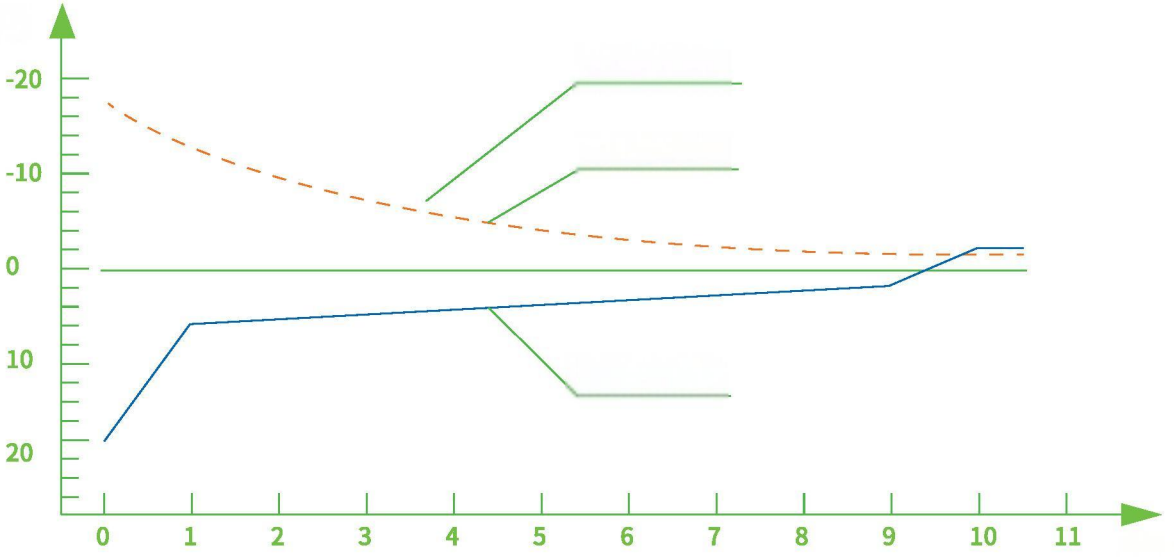


Live Monitoring on Mobile Devices

Food Thawing Curve Example

Test Food

Type	**Beef**
External Dimensions	200(L) ×200(W) ×50(T)
Initial Temperature	−18℃
Final Temperature (Core/Surface)	−3℃/ - 1℃
Thawing Process Divided into Three Stages:	
Stage 1 Chamber Temperature	**+18°C to +6°C, duration 1 hour**
Stage 2 Chamber Temperature	**+6°C to +2°C, duration 8 hours**
Stage 3 Chamber Temperature	**+2°C to -2°C, refrigerated preservation**
Relative Humidity in Chamber	**Above 95%**
Weight Before Thawing	**1940 grams**
Weight After Thawing	**1925 grams**
Weight Loss Rate	0.77%



Further dimensions available on request.

Comparison of Different Thawing Methods

Comparison of Applicability of Various Thawing Methods

Comparison Items	Air Thawing	Water Thawing	Natural Air Thawing	Microwave Thawing
Applicable Scope	Various Foods	Aquatic and Meat	Various Foods	Various Foods
Temperature and Humidity	Controlled	Not Controlled	Not Controlled	Temperature Controlled Humidity Not Controlled
Color	Bright and Fresh	Grayish White	Dull	Scorched/Burnt Color
Muscle Tissue	Elastic	Cotton-like / Spongy	Loose / Flabby	Rubbery Texture
Weight Loss Rate	<1%	3%–5%	3%–4%	2%–3%
Nutritional Content	Retains Original Nutrients	Protein Loss	Protein Loss	Protein Denaturation
Magnitude of Harmful Bacteria	100	10000	1000	100
Thawing Time	12-18 hours	8-10 hours	30 hours	0.5-2 hours
Final Temperature Uniformity	Uniform	Non-Uniform	Non-Uniform	Non-Uniform
Operating Difficulty	Very Simple	Requires Operating Experience	Requires Operating Experience	Relatively Simple
Floor Space / Footprint	Very Small	Very Large	Very Large	Very Small

Economic Analysis

Based on pork thawing volume of 10 tons/day	Air Thawing	Water Thawing	Natural Air Thawing	Microwave Thawing
Weight Loss Rate	Calculated at 1%	Calculated at 3%	Calculated at 3%	Calculated at 2.5%
Weight Loss (kg/day)	100	300	300	250
Daily Economic Loss (Market avg. price 15 RMB/kg)	1500.0	4500.0	4500.0	3750.0
Monthly Economic Loss (RMB)	45000.0	135000.0	135000.0	112500.0
Power Consumption	16 kWh/ton	0	0	33 kWh/ton
Daily Electricity Cost (RMB) (Avg. rate 1.0 RMB/kWh)	160.0	0	0	330.0
Monthly Electricity Cost (RMB)	4800.0	0	0	9900.0
Water Consumption	1 ton	150 ton	0	0
Daily Water Cost (RMB) (Avg. water rate 5 RMB/ton)	5.0	750	0	0
Wastewater Treatment Cost (Avg. treatment cost 5 RMB/ton)	5.0	750	0	0
Monthly Water-Related Operating Cost	300.0	45000.0	0	0
Total Monthly Consumption Cost)	50100.0	270000.0	135000.0	122400.0

Thawed Product

Thawed Product （Beef）

Thawed Product (Pork)

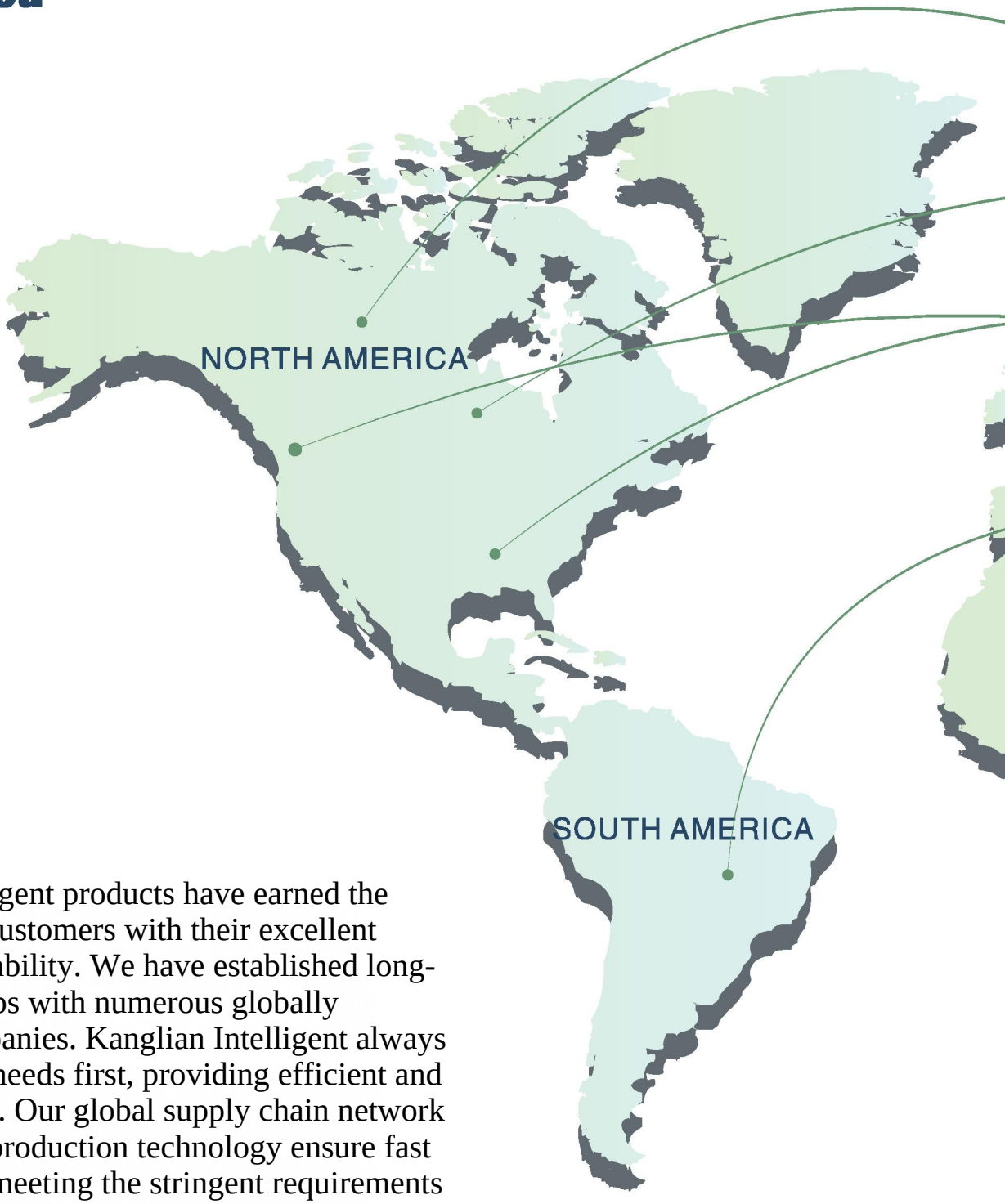
Thawed Product (Chicken)

Thawed Product (Fish)

Thawing Process

Thawing Process

Sales Area



Kanglian Intelligent products have earned the trust of global customers with their excellent quality and reliability. We have established long-term partnerships with numerous globally renowned companies. Kanglian Intelligent always puts customer needs first, providing efficient and precise services. Our global supply chain network and advanced production technology ensure fast delivery while meeting the stringent requirements of different markets. Choosing Kanglian Intelligent means choosing a reliable partner that stands alongside world-leading enterprises.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Innovation, Quality, and Service for a Sustainable Future

KANGLIAN

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